

Chapter 23

Generalization and Efficiency on Finger Print Presentation Attack Anomaly Detection

Hemalatha J.

*Department of Computer Science and Engineering, AAA College of Engineering and Technology,
India*

Vivek V.

AAA College of Engineering and Technology, India

Kavitha Devi M. K.

Thiagarajar College of Engineering, India

Sekar Mohan

AAA College of Engineering and Technology, India

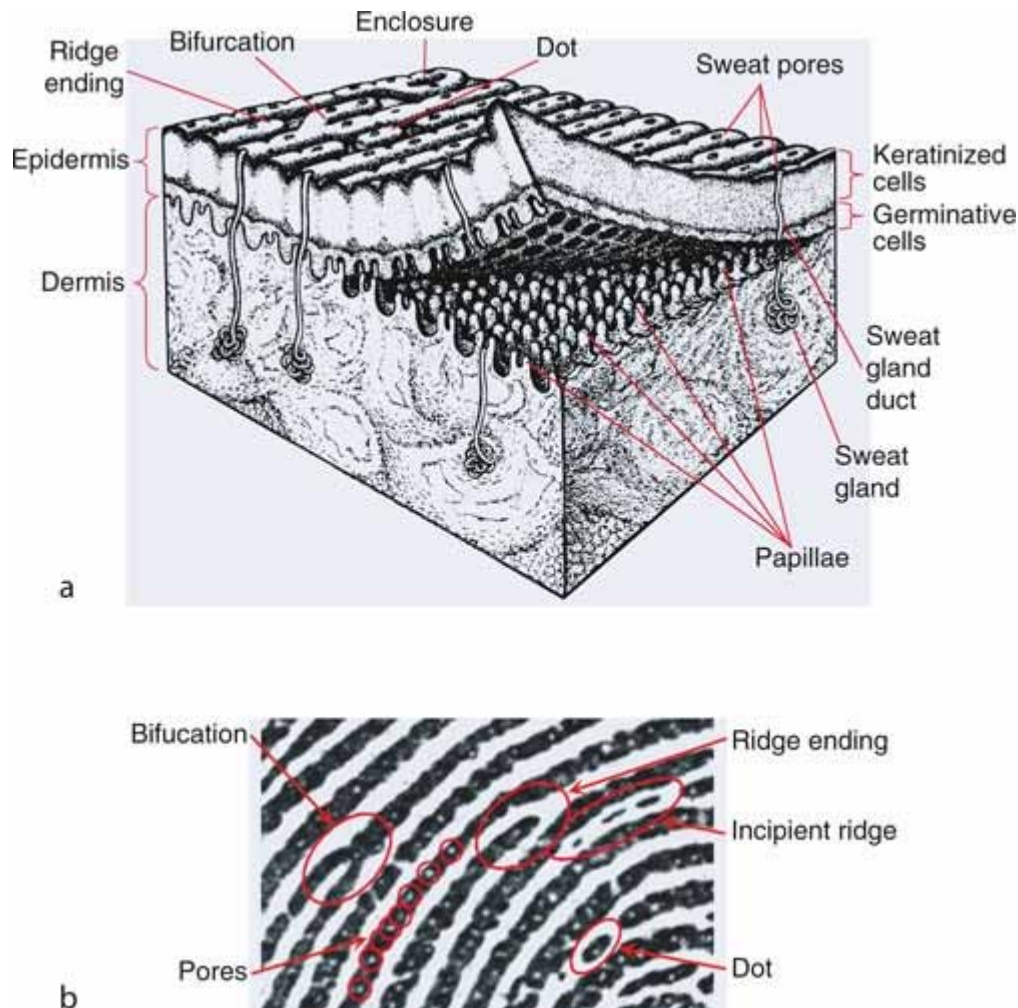
ABSTRACT

Biometric identification systems are highly used for verification and identification like fingerprint recognition, voice recognition, face recognition, etc. The very famous biometric technique is fingerprint recognition. A fingerprint is the pattern of ridges and valleys on the surface of a fingertip. The endpoints and crossing points of ridges are called minutiae. The basic assumption is that the minutiae pattern of every finger is unique and does not change during one's life. In the present era, fingerprint-based biometric authentication system gets popularized, but still, this biometric system is vulnerable to various attacks, particularly presentation attacks. This chapter explains how the knowledge-driven neural networks work on fingerprint anomaly detection. In addition, the various features available to detect the anomaly in biometric are also discussed.

INTRODUCTION

In the recent days due to the advancements in science and technology we are finding biometric recognition systems in huge places especially in confidential places. The biometric recognition application system emerges with high security control based on the users requirements and their convenience level. Examples of some biometric recognition application systems are: i) fingerprint lock and eyerish recognition in smart phones, mobile payments fingerprint recognition in voters system, palm print recognition, crossing in international borders, computerized patient records, cryptographic key generation credit cards and etc. Among all the biometric recognition systems fingerprint recognition systems are widely using system (Antonelli, 2006; Baldisserra, 2006). Even though the fingerprint biometric system communities have developed huge significant advancements, it has highly affected by more external attacks and thereby we are in need of further advancements then and there. The biological morphological structure of friction ridge skin is given below.

Figure 1. Biological morphological structure of friction ridge skin



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